

## Shoreline Water System Financial Analysis

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# Introduction

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The City of Shoreline (the City) has entered into an Agreement with Seattle Public Utilities (SPU) to purchase SPU's water facilities inside the City boundaries in the year 2020. Currently water service is provided to the City residents directly by SPU. The acquisition will allow the City to operate its own water utility on behalf of its residents. It is important to note that about one-third of the residents in the City are served by the Shoreline Water District (SWD) and this acquisition will not impact SWD customers.

Prior to finalizing the purchase agreement, the City is conducting due diligence on the acquisition and will put the issue up for a city-wide vote. As part of the due diligence, the City retained EES Consulting to provide three inter-related analyses. The first is an Engineering Review to assess the SPU assets that are included in the acquisition, develop operating costs and procedures for the new utility, and develop the short-term and long-term capital needs of the utility. The second piece is a long-term financial analysis to determine the projected revenues and costs associated with operating the water utility, along with the associated financial risks. The final component is a Business Plan to address how the tasks and responsibilities required of the new water utility will be carried out.

The findings of the financial analysis are presented in the report. While an initial financial analysis was conducted to determine the feasibility of entering into the agreement with SPU, this report provides a more comprehensive and detailed analysis based on updated information as well as incorporating the findings from the Engineering Review.

This report contains six sections. The first section addresses the general financial assumptions, including cost escalation, financing and growth assumptions. In the next section the development of the revenue forecast is discussed. Costs for operations as well as capital requirements are then presented. The base case financial results are then provided, followed by a section on sensitivity analysis for the results. Finally, the results are summarized and recommendations are provided.

# General Financial Assumptions

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To determine the financial results associated with the acquisition, the analysis looks at the expected revenues and costs for the period 2020 through 2040. To get to the initial operation date, assumptions were also required to get from revenues and costs in terms of 2012 levels into terms for the year 2020. In order to accomplish this, several basic assumptions were needed to project both revenues and costs into the future. These basic assumptions include the financing of debt and the escalation rates for both revenues and costs. It is assumed that January 1, 2020 is the start date for the new utility and all revenues and costs are projected for full calendar years. This start date simplifies the analysis, however, we would not expect a start date other than January 1<sup>st</sup> to impact the overall findings of the results.

## Financing

Based on the \$25 million agreed upon acquisition price plus any additional capital required for the start-up of the utility, Shoreline plans to issue revenue bonds to cover the costs. For a municipal utility, these bonds are tax-exempt. The bonds will be fully backed by the revenues of the new utility, and will not impact the City's own borrowing capabilities. When issuing bonds, the new utility will need to provide adequate financial analysis to support the payment of the bonds and the analysis will be reviewed by the various rating agencies. We have been involved in similar bond issuances for numerous utilities and the financial analysis undertaken for this report are similar to what is required for purposes of issuing bonds.

It was assumed that the borrowing cost for the bonds will be 5%. This is higher than current rates, however, given that the acquisition will not occur for another 8 years, the 5% level reflects the 20-year average of historic rates. To reflect the risk associated with bond rates, alternative rates are included in the sensitivity analysis.

It was assumed that the acquisition cost would be 100% debt financed over a 30 year period.

Standard terms for revenue bonds require that operating revenues exceed operating costs by an amount sufficient to cover the bond payments under all circumstances. This extra amount to cover the bond payments is referred to as the debt service coverage ratio (DSC). A DSC of 1.2 is generally required for municipal revenue bonds, and if the utility dips below that level they can be in default of the bond covenants. For that reason it is important to plan for a DSC level well above 1.2. SPU has recently raised its DSC target to 1.7. This may be a reasonable DSC target for the City as well. In the case of this analysis, revenues are set equal to the projected rates from SPU and therefore the DSC is calculated from the projected revenues and costs. Looking at the resulting level of the DSC is one indication of whether the financial results provide for financially sound utility.

## SPU Rates

To determine the revenues associated with the new water utility, it was assumed that rates will be at the same level as SPU would charge Shoreline non-SWD customers without the acquisition. The

City has committed to keeping rates at or below the level that would otherwise be charged by SPU. For the financial analysis using projected SPU rates provides the base amount of revenues expected. If there are surplus revenues, they could be used to lower future rates for Shoreline (Non-SWD) residents.

Currently Shoreline (Non-SWD) residents pay rates that are 21% higher than SPU customers within the City of Seattle. A portion of this premium is due to the 6% franchise fee that is collected in rates and paid to the City. SPU has announced rates for the 2012 through 2014 period that include significant rate increases. These approved rates are the starting point for determining the revenues for the water utility, and are shown in the following table.

<b>Table 1</b> <b>SPU Water Rates for the City of Shoreline</b>				
	<b>1/1/2011</b>	<b>1/1/2012</b>	<b>1/1/2013</b>	<b>1/1/2014</b>
<b>Residential Charges</b>				
Monthly Charge Per Meter (3/4")	\$15.80	\$16.05	\$16.35	\$16.70
Off-peak per CCF	\$4.39	\$4.90	\$5.46	\$6.05
Peak Up to 5 CCF	\$4.83	\$5.26	\$5.74	\$6.22
Peak Next 13 CCF	\$5.62	\$6.25	\$6.94	\$7.69
Peak Over 18 CCF	\$14.31	\$14.31	\$14.31	\$14.31
<b>Commercial Charges</b>				
Monthly Charge Per Meter (1")	\$16.30	\$16.30	\$16.85	\$17.20
Off-Peak per CCF	\$4.39	\$4.90	\$5.46	\$6.05
Peak per CCF	\$5.62	\$6.25	\$6.94	\$7.69
<b>Residential Percent Change</b>				
Monthly Charge Per Meter (3/4")		1.6%	1.9%	2.1%
Off-peak per CCF		11.6%	11.4%	10.83%
Peak Up to 5 CCF		8.9%	9.1%	8.4%
Peak Next 13 CCF		11.2%	11.0%	10.8%
Peak Over 18 CCF		0.0%	0.0%	0.0%
<b>Commercial Percent Change</b>				
Monthly Charge Per Meter (1")		0.0%	3.4%	2.1%
Off-Peak per CCF		11.6%	11.4%	10.8%
Peak per CCF		11.2%	11.0%	10.8%

On-peak rates cover the period May 16 - September 15 while off-peak rates cover the period September 16 – May 15. These rates have taxes built into the rate levels. This includes 5.029% for the state utility tax and 6% for the current Shoreline franchise fee.

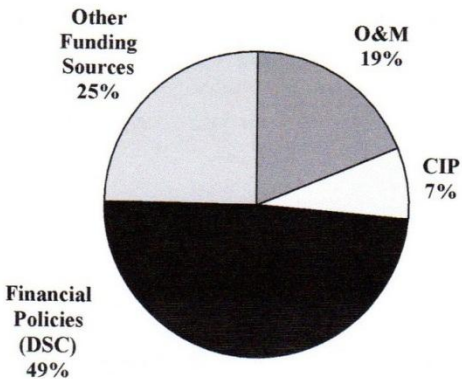
Rates do not increase uniformly for each rate component, but average nearly 9% for all three years. Generally the increases in the monthly customer charge are small. The means the bulk of the increases occur to the consumption charges, which are billed on a per CCF basis. Note that CCF stands for 100 Cubic Feet and is equivalent to 748 gallons. Several of the consumption rates

increase by an average of over 10% per year. This rate increases are especially dramatic given the low level of inflation at the current time.

In its *2012-2014 Water Rate Study*, dated December 2011, SPU discusses the need for these large rate increases and provides the following chart on page 5 of its report to show the driving factors behind the increase in its revenue requirements.

The chart shows that the smallest driver of rate increases is the Capital Improvements Plan (CIP) of the utility. O&M represents the operations and maintenance costs of the utility. Together, the capital and operating costs of the utility only drive about one quarter of the total increase in the revenue requirements. Another quarter is driven by a reduction in other funding, primarily water tap fees. About half of the total increase is due to the need to meet more conservative financial policies drive by the DSC or debt service coverage ratio which ensures that the utility has more than enough funds to cover its debt obligations.

**Figure 1**  
**SPU Revenue Requirements Drivers**



The increase in the revenue requirements is only a portion of the need for a rate increase. Rates are basically equal to the revenue requirements divided by the quantity of water sold. In SPU’s case, the expected water use dropped significantly and is a contributing factor towards the rate increases. The following table is taken from page 7 of the SPU report and shows that reduced consumption on its own represents a rate increase above 5% in 2012 and around 1% on average for 2013 and 2014.

	2012	2013	2014
Revenue Requirement Increase	3.9%	7.7%	8.1%
Demand Impact	5.4%	0.9%	0.3%
Rate Assistance Impact	-0.6%	0.1%	0.1%
Average Rate Increase	8.7%	8.7%	8.5%

In looking at the projections of SPU rates for Shoreline we used the rates for 2012 through 2014 as the starting point. It was not expected that the rate increases during that time would continue indefinitely. Therefore we looked at the increases of SPU rates for the period of 2004 through 2011 as a source for predicting future retail rate increases. The average over that period was roughly 5% per year. Looking at the entire period from 2001 through 2014, the average rate increase was 7% per year.

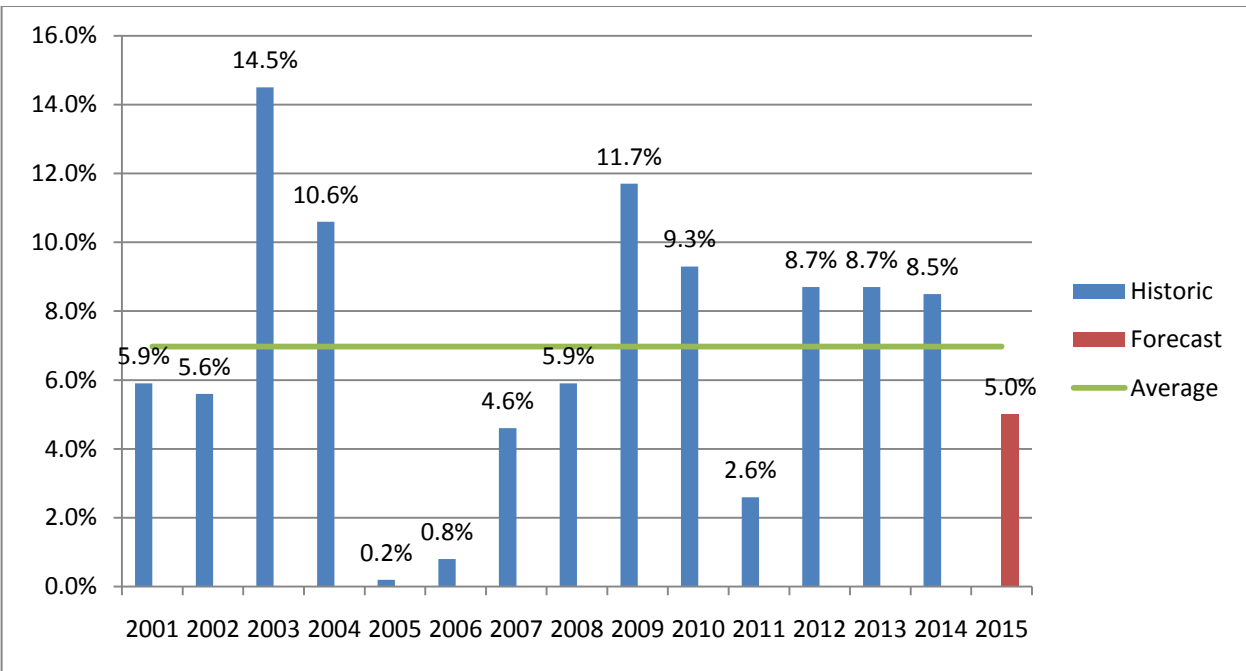
Another source we looked at included a compilation of data from water utilities in Washington. The Washington Public Utility Districts Association (WPUDA) provides a Sourcebook each year with general information on the PUDs in the state. For the water PUDs, the average increase in water rates for the years 2004-2010 was 5.7%. This compares to the average increase in operating costs of 5.4% for the same utilities over the same time period.

Further, SPU stated on page 7 of its *2013 Water System Plan Official Yield Estimate and Long-Range Water Demand Forecast*, dated December 2011, that the rates for retail water are expected to go up by 0.4% above the rate of inflation.

Given these various data sources, the escalation for SPU’s retail rates is assumed at 5% per year for the period 2014 through 2040. This assumption is adjusted to reflect both higher and lower increases in the sensitivity analysis.

Annual rate increases compared to the forecast of future rate increases for SPU can be found in Figure 2. Given past increases, the forecast for future rate increases appears to be conservative.

**Figure 2**  
**SPU Historic and Forecast Rate Increases**



## Cost Escalation

Based on SPU's own statements and the differences in the WPUDA rate and cost increases, it is assumed that the 5% projected retail rate increases is 0.4% higher than the increases in the costs for both CIP and O&M. Therefore, the cost escalation for 2012 through 2040 is assumed to be 4.6% per year. Both the capital costs and the annual O&M costs developed in the Engineering Review were in 2012 dollars and are escalated to reflect the year in which they are spent.

## Wholesale Water Costs

The new water utility will likely purchase wholesale water from SPU. Wholesale rates for the years 2012 to 2014 are available, as shown below. While wholesale rates had a significant increase in 2012, the increases in 2013 and 2014 are fairly small.

<b>Table 3</b> <b>SPU Wholesale Water Rates</b>				
	<b>1/1/2011</b>	<b>1/1/2012</b>	<b>1/1/2013</b>	<b>1/1/2014</b>
<b>Wholesale Charges</b>				
Off-peak per CCF	\$1.29	\$1.52	\$1.53	\$1.53
On-peak per CCF	\$1.91	\$2.25	\$2.26	\$2.27
<b>Wholesale Percent Change</b>				
Off-peak per CCF		17.8%	0.7%	0.0%
On-peak per CCF		17.8%	0.4%	0.4%

Over the 3-year period, wholesale water rates have increased an average of about 6% compared to the average increase in retail rates of nearly 8.7%. During the 2004-2011 period, wholesale rates increased an average of 3.2% per year. Because SPU wholesale rate increases have been consistently lower than SPU retail rate increases, it is assumed that wholesale rates will increase by 3.5% per year in the future.

## Retail Rate Comparison

While it is not used in the development of the financial analysis, a comparison of customer bills was done for the Shoreline (non-SWD) residents at SPU rates compared to other nearby water utilities. A table showing the actual rates for each utility can be found in the Appendix. The following tables show the comparison of bills for both the residential and commercial class. In each case, the average use per customer for SPU customers in Shoreline was used to calculate the bill. For residential customers the average usage was 8.2 CCF per month in the on-peak period and 5.4 CCF per month in the off-peak period. For commercial customers the average usage was 75.7 CCF per month in the on-peak period and 42.4 CCF per month in the off-peak period.

**Table 4**  
**Annual Residential Bill Comparison of Seattle-Area Utilities**

	Average Monthly Basic Charge	Average Monthly bill Off-peak	Average Monthly bill On-peak	TOTAL ANNUAL BILL
SPU Shoreline residents 2012	\$16.05	\$26.46	\$46.30	\$589.48
SPU Shoreline residents 2013	\$16.35	\$29.48	\$50.91	\$635.70
SPU Shoreline residents 2014	\$16.70	\$32.67	\$55.71	\$684.59
City of Bothell	\$10.51	\$16.36	\$24.85	\$356.40
City of Edmonds*	\$10.30	\$11.56	\$17.55	\$286.28
Tacoma Water	\$25.15	\$7.39	\$12.31	\$410.16
SPU Seattle residents	\$13.25	\$21.82	\$38.18	\$486.28
Northshore Utility District*	\$15.00	\$14.85	\$24.18	\$395.52
City of Bellevue*	\$14.81	\$15.98	\$24.27	\$402.62
City of Everett (1)	\$16.02	\$0.00	\$5.87	\$215.72
Shoreline Water District*(2)	\$18.98	\$14.76	\$26.01	\$449.88
Lake Forest Park Water District*	\$18.50	\$16.20	\$24.60	\$450.00

\* Bi-monthly billing cycle – 3/4" meter

(1) Basic charge includes water use up to 12 CCF within the billing cycle

(2) For homes less than 5,000 SF

For residential customers, SPU has relatively low monthly basic charges but the highest rates during the on-peak period. Overall the 2012 Shoreline rates yield average bills that are higher than most of the nearby utilities. By 2014 those rates will exceed all of the surrounding rates, however, this does not account for the likely rate increases for the other utilities.

**Table 5**  
**Annual Commercial Bill Comparison of Seattle-Area Utilities**

	Average Monthly Basic Charge	Average Monthly bill Off-peak	Average Monthly bill On-peak	TOTAL ANNUAL BILL
SPU Shoreline residents 2012	\$16.55	\$207.76	\$473.13	\$3,753.20
SPU Shoreline residents 2013	\$16.85	\$231.50	\$525.36	\$4,155.66
SPU Shoreline residents 2014	\$17.20	\$256.52	\$582.13	\$4,587.09
Tacoma Water	\$41.91	\$63.47	\$113.32	\$1,463.96
City of Edmonds*	\$25.36	\$90.74	\$162.00	\$1,678.24
City of Everett (1)	\$53.40	\$49.39	\$111.70	\$1,485.72
City of Bothell	\$31.97	\$105.15	\$320.97	\$2,508.72
Shoreline Water District*(2)	\$34.73	\$147.13	\$262.68	\$2,644.52
Lake Forest Park Water District*	\$34.00	\$127.20	\$227.10	\$2,334.00
SPU Seattle residents	\$13.65	\$171.30	\$389.86	\$3,093.64
City of Bellevue*	\$26.20	\$127.62	\$319.45	\$2,613.21
Northshore Utility District*	\$30.00	\$164.55	\$299.41	\$2,874.04

\* Bi-monthly billing cycle – 1” meter

(1) Basic charge includes water use up to 20 CCF within the billing cycle

(2) Basic charge is dependent upon the square footage of the commercial structure served. Basic charge shown is based upon a 840 SF building.

For commercial customers, the SPU rates also have the lowest customer charge and the highest usage charges. Combined, the Shoreline rates for commercial customers are higher than all of the other utilities included in the comparison.

# Development of Post-Acquisition Revenues

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## Overview

Revenues for the new Shoreline water utility are calculated on the basis of many different inputs to best reflect the complexity of the rates. Revenues for Shoreline customers were projected starting with 2011 actual billings, and are forecast through the year 2040. Forecasts were completed for each rate class based on the number of customers times the basic charge plus the projected use per class times the usage charge. This approach takes into account different growth rates for each customer class.

Rates projected for SPU are the baseline for revenues for all years. During the 2011-2019 period Shoreline (Non-SWD) residents will remain on SPU rates. While we did not complete a full financial evaluation for those years, we did calculate the revenues at SPU rates so that we would have a good basis for the starting revenues in the year 2020 when the acquisition takes place.

SPU rates are established as the baseline with the goal of having rates for the new Shoreline water utility that are no higher than SPU rates. To the extent that there are surplus revenues after the acquisition, the Shoreline water utility would have the option of reducing rates or improving capital facilities, or some combination of the two.

## Components of the Revenues Projections

In order to provide the detailed revenue forecast a series of separate components were forecast individually and then appropriately combined to determine the results. The specific components are as follow:

- Number of customers by class
- Average use per customer by class
- Total water sales by class (Number of customers times average use per customer)
- Basis service charge by class and by meter size
- Consumption charges per CCF by class, including seasonal and block rates

The results provide revenues for 2011 through 2040 for each of the following customer classes:

- Residential Single-family
- Multi-family
- Commercial
- Master Meter Residential Developments (RRMD)
- Fire Service
- Other Revenue

The following sections discuss the components of the revenue forecast followed by a summary of the results.

## Development of the Customer Forecast

SPU provided Shoreline with the actual number of customers served by SPU within the City of Shoreline for the years 2006-2011. The forecast was developed using the 2011 actual customers and allowing for growth over the 30-year period.

Several different sources were looked at to determine the appropriate customer growth rates for Shoreline. In terms of growth between 2006 and 2011 actual data, the number of customers was relatively flat for the residential (single-family and multi-family) and commercial classes. Because this was a period with a strong recession, these results are not surprising. However, we would not expect customer growth to continue to be flat as we enter into the recovery period and over a longer term. In fact, customers for 2011 are higher than in 2010 for both the multi-family and commercial classes.

SPU provided its own load forecast completed in the *2013 Water System Plan Appendix A-1, Official Yield Estimate and Long-Range Water Demand Forecast*. Within this forecast SPU has projected average annual population growth of 0.20% per year for single-family households and 1.7% for multi-family households. Employment is projected to grow at an average annual rate of 1.5%. These projections apply to the entire SPU retail area and specific growth rates or forecast numbers are not provided for Shoreline. We do not expect Shoreline to grow in exactly the same manner as the City of Seattle.

To determine projections specific to Shoreline, we looked at projections from the Puget Sound Regional Council (PSRC) 2006 Forecast. Because the PSRC forecast is a few years old, we used the growth rates rather than the actual numbers to provide the forecast of customers. This allows for the correct starting point for 2011 based on the actual results for the year. The PSRC projects single-family growth of 0.21% from 2010 to 2020, 0.18% from 2020 to 2030 and -0.11% from 2030 to 2040. For multi-family households the projected growth rates were 1.21% for 2010 to 2020, 1.22% for 2020 to 2030, and 1.42% for 2030 to 2040.

Although the SPU forecast is more current, it is more specific to the City of Seattle. Therefore, we used the PSRC forecast growth rates to reflect the growth in water customers for single-family and multi-family customers. The growth rate is comparable to SPU's for single-family but has lower growth for multi-family customers than expected by SPU. This is consistent with expectations as Shoreline is not as urban as Seattle and will likely have less multi-family housing. One exception is that while the PSRC forecast has an annual decline in single-family customers from 2030-2040, we have changed this to reflect zero growth in customers.

For commercial customers, SPU does not list a specific growth rate for commercial customers. However, it is forecasting a growth rate of 1.5% for employment and overall commercial usage of around 1% per year on average. The PSRC has an employment projection specific to Shoreline with average annual growth rates of 0.59% for 2010 to 2020, 0.49% for 2020 to 2030 and 0.62% for 2030 to 2040. Another source of data is from the King County Countywide Growth Planning Policies (12/2010) which shows a growth projection of 5,000 new jobs in Shoreline for the period

2006 – 2031. When compared to current employment levels of roughly 28,000 this represents growth of 0.66% per year.

While commercial customers may not grow at exactly the same rate as employment levels, they will be highly correlated. Given the various sources of data, an average growth rate of 0.66% based on the King County forecast is applied to commercial customers for the entire period. This is newer and just above the level of the PSRC forecast growth rate, but lower than the SPU forecast growth rate.

For the MMRD and Fire Service Classes, the number of customers is expected to remain constant.

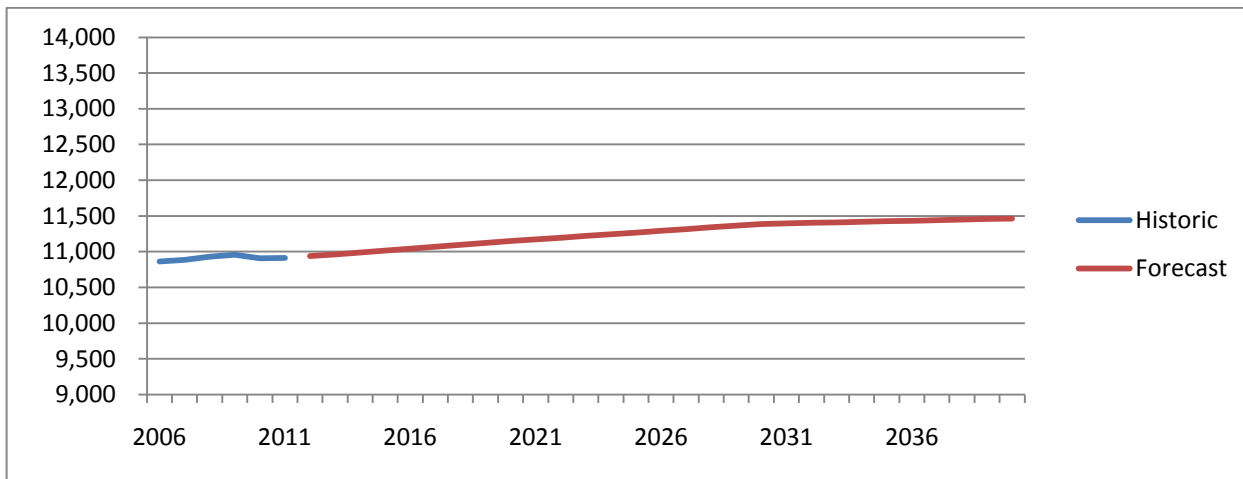
<b>Table 6</b> <b>Forecast of Customer Growth Rate by Class</b>						
	2015	2020	2025	2030	2035	2040
Residential	0.21%	0.21%	0.18%	0.18%	0.00%	0.00%
Multi-Family	1.21%	1.21%	1.22%	1.00%	1.42%	1.42%
Commercial	0.66%	0.66%	0.66%	0.66%	0.66%	0.66%
MMRD	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	0.24%	0.24%	0.21%	0.21%	0.07%	0.07%

<b>Table 7</b> <b>Forecast of Customers by Class</b>							
	2011 Actual	2015	2020	2025	2030	2035	2040
Residential	9,671	9,753	9,858	9,946	10,035	10,035	10,035
Multi-Family	236	248	263	279	296	318	341
Commercial	399	410	423	437	452	467	483
MMRD	4	4	4	4	4	4	4
Fire	136	136	136	136	136	136	136
Other	465	465	465	465	465	465	465
Total	10,911	11,016	11,149	11,268	11,389	11,425	11,464

Note that in all cases we expect that growth will follow economic cycles and are not likely to be equal from year to year. However, for planning purposes, it was assumed that growth rates would be applied evenly among the time periods.

Figure 3 provides both historic and forecast number of customers for the service area.

**Figure 3**  
**Historic and Forecast Total Customers**



### Development of the Water Use Forecast

SPU provided Shoreline with the consumption by month for each class for the years 2006-2011. Water sales are reported in hundred cubic feet (CCF), which is the same unit of measure used for billing purposes. One CCF is equal to 748 gallons of water. The CCF sales figures were divided by the number of customers in each class to develop the average CCF use per customer. Generally, average use is forecast independently to see the trends in usage separate from the growth in the number of customers. The average use per customer was then multiplied by the number of customers for each year to develop the total sales by class forecast.

Actual average use per customer fluctuated from year to year based on weather conditions. For that reason it is difficult to measure the actual growth rate for the 2006-2011 period. The years 2006 and 2009 appear to have particularly high use while 2008 and 2011 have particularly low use. In looking at the 3-year average for 2006-2008 as compared to 2009-2011, we see that average annual usage per customer decreased by -1.2% for single-family, stayed flat for multi-family, and increased by 0.4% for commercial. As this was during a recessionary period, we would not necessarily expect these trends to continue indefinitely.

Because of weather variations, we used the 3-year average use per customer for 2009-2011 as a smoothed out usage level to better reflect average conditions. This adjusted amount was used as the starting point for 2011 for developing the load forecast.

The SPU forecast did not provide growth rates for usage per customer but did provide growth rates for total use by class. For single-family the total usage is forecast to decrease by about 1% per year. Average use would decline by roughly 1.2% as they are forecasting customers to grow by 0.2%. Multi-family total use is projected to increase by 1% per year. Given the customer growth rate of 1.7%, this means average usage per customer would decline by about 0.7% per year. For commercial, total sales are also forecast to increase by about 1% per year. In all three classes, use

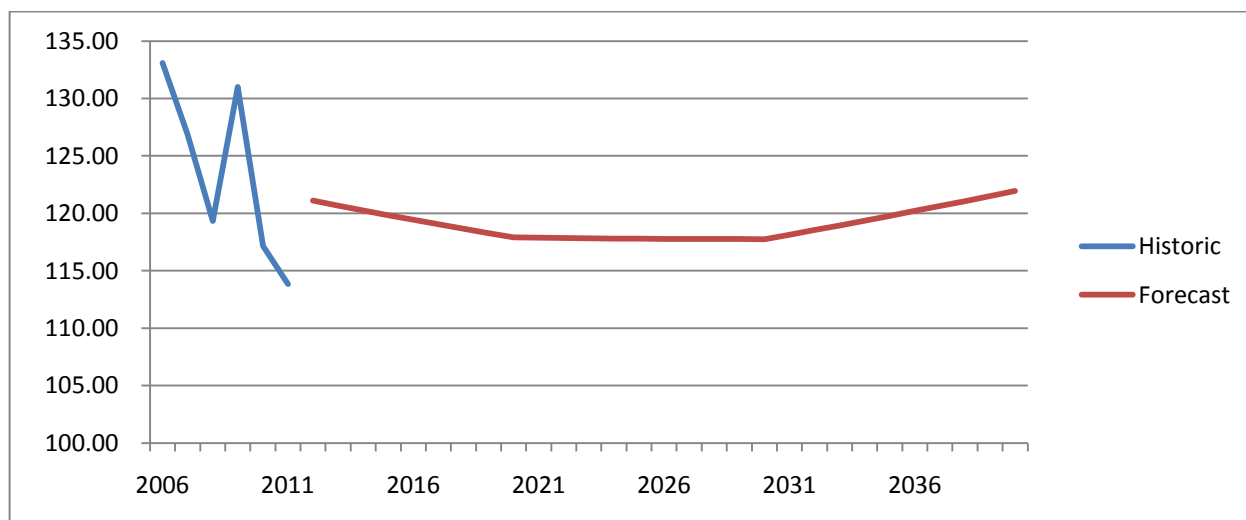
per customer is slower through 2020 and then picks up (or levels off in the case of declining use) starting in 2030.

The SPU forecast was used as a guide in setting the growth rates for Shoreline. Single-family usage per customer was projected to decline by 1% per year from 2012 to 2020 and by 0.5% from 2020 to 2030. It was assumed that consumption would be flat after 2030. These annual reductions in average use result in CCF per customer that is over 20% lower than the usage in 2006. Multi-family and MMRD growth rates were forecast to be half of those for multi-family. Commercial use per customer was forecast to increase by 0.5% per year for 2012 to 2020, 0.25% for 2020 to 2030 and remain flat after 2030. This would reflect a shift from smaller to bigger commercial customers. Usage for the MMRD class was projected to decline by half the rate as the single-family and multi-family customers. In all cases it was assumed that a continued percentage increase or decrease in usage was not sustainable due to the exponential nature of percent changes as well as the fact that there is some natural minimum level of consumption expected.

Table 8 Forecast of Use per Customer Growth Rate by Class						
	2015	2020	2025	2030	2035	2040
Residential	-1.00%	-1.00%	-0.50%	-0.50%	0.00%	0.00%
Multi-Family	-0.50%	-0.50%	-0.25%	-0.25%	0.00%	0.00%
Commercial	0.50%	0.50%	0.25%	0.25%	0.00%	0.00%
MMRD	-0.50%	-0.50%	-0.25%	-0.25%	0.00%	0.00%
Fire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Figure 4 provides a chart of the historic and forecast for the average CCF per customer.

**Figure 4**  
**Historic and Forecast Average Use per CCF**



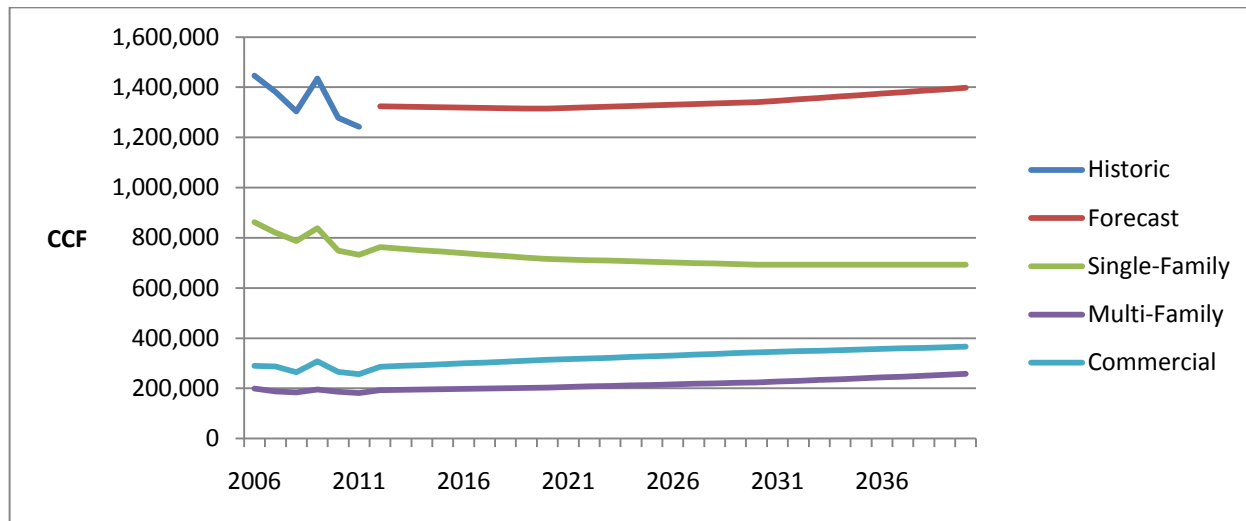
The results of the number of customers times the average use per customer yield resulting sales by customer class that decline by about 0.3% for single-family, increase by 1% for multi-family and increase by 0.8% for commercial. The total system water sales forecast is relatively flat with a small average annual growth rate of 0.2% through 2040.

**Table 9**  
**Forecast of Total Annual CCF by Class**

	<b>2011 Actual</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
Residential	732,074	744,585	715,651	704,201	692,934	692,934	692,934
Multi-Family	180,889	196,654	203,655	213,702	223,756	240,106	257,651
Commercial	256,160	295,905	313,512	328,055	343,274	354,741	366,592
MMRD	38,208	43,792	42,708	42,177	41,652	41,652	41,652
Fire	199	798	798	798	798	798	798
Other	34,735	38,366	38,366	38,366	38,366	38,366	38,366
<b>Total</b>	<b>1,242,265</b>	<b>1,320,100</b>	<b>1,314,689</b>	<b>1,327,298</b>	<b>1,340,779</b>	<b>1,368,597</b>	<b>1,397,992</b>

The historic and forecast sales volumes in CCF are provided in Figure 5. Both the total and the amounts by customer class are included in the chart.

**Figure 5**  
**Historic and Forecast Total Annual CCF**



## Development of the Revenue Forecast by Class

SPU recently completed a cost of service study and established rates for the 2012 to 2014 period. The new rates represent significant rate increases. Because the rate increases differ by component and rate class, we calculated the revenues for Shoreline customers using the new rates for each year. Revenues consist of both base service charges and commodity charges.

While we were provided with monthly usage by class for Shoreline (Non-SWD) residents, we did not have a breakdown of usage in the different summer season blocks. In developing revenues for 2012-2014, we first multiplied actual 2011 usage by the 2011 rates to true-up to the reported 2011 actual revenues. Based on actual single-family usage, 57% of consumption fell into the 8-month off-peak season of September 16-May 15. The summer period has a three-tier structure with block 1 up to 5 CCF per month, block 2 for the next 13 CCF, and block 3 for over 18 CCF per month. We determined that 26.5% would occur in block 1 based on 5 CCF times the number of customers, another 14% would be within block 2 and the remaining 2.5% would be in block 3. For the multi-family class, the loads were split between 61% off-peak, 3% in block 1, 35% in block 2 and 1% in block 3. For the commercial class there are no block rates and usage was split 53% off-peak and 47% on-peak.

After developing the breakdown of consumption by rate period/block, we could then split the 2012 annual forecast of consumption into the appropriate seasons and blocks. Usage was then multiplied by the SPU rates for 2012-2014 for each season and block. The resulting revenues are \$9.4 million in 2012.

Based on average rates per CCF for Shoreline (Non-SWD) residents as a whole, the rate increases resulting from the new SPU rates are an average of 6.3% in 2012, 8.4% in 2013 and another 8.2% in 2014.

**Table 10**  
**Short-Term Forecast of Total Annual Revenues by Class**

	<b>2011 Actual</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Residential	\$5,489,547	\$6,059,065	\$6,476,517	\$6,912,932
Multi-Family	\$958,677	\$1,128,424	\$1,254,018	\$1,389,194
Commercial	\$1,452,391	\$1,743,212	\$1,948,133	\$2,167,805
MMRD	\$224,812	\$292,744	\$313,827	\$335,951
Fire	\$139,497	\$163,411	\$176,060	\$189,419
Other	\$193,997	\$186,754	\$201,210	\$216,478
Total	\$8,458,920	\$9,573,610	\$10,369,764	\$11,211,779

Note that these revenues, along with all future revenues projected, include the 5.029% state utility tax and the City of Shoreline franchise fee, which will be converted to a City utility tax after the acquisition.

## Long-Term Revenue Projections

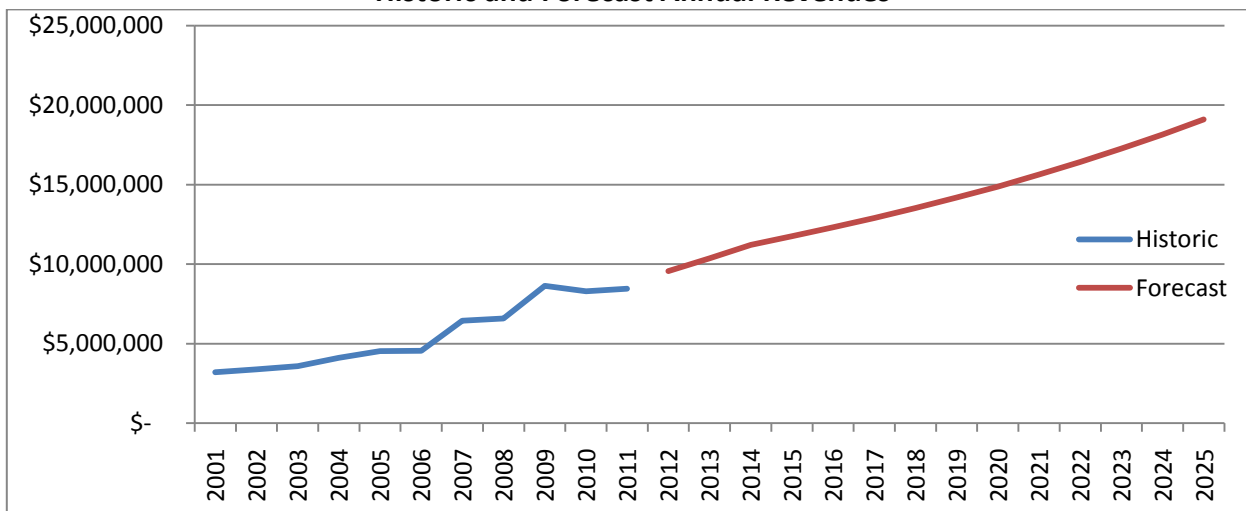
To project the long-term revenues of the water utility, the 2014 revenues by class were used as the starting point. Revenues were based on the CCF forecast by class times the average rate per CCF forecast. Because we do not have SPU rates by component beyond 2014, we applied the expected 5% rate increase per year to the average rate per CCF equally for each customer class. The revenues reflect both the growth in CCF sales and the projected rate increases over time.

Table 11 Long-term Forecast of Total Annual Revenues by Class					
	2020	2025	2030	2035	2040
Residential	\$8,833,686	\$11,093,886	\$13,932,385	\$17,781,646	\$22,694,386
Multi-Family	\$1,941,465	\$2,600,103	\$3,474,583	\$4,758,586	\$6,517,080
Commercial	\$3,113,707	\$4,158,315	\$5,553,374	\$7,324,444	\$9,660,338
MMRD	\$436,868	\$550,632	\$694,021	\$885,766	\$1,130,487
Fire	\$253,839	\$323,971	\$413,478	\$527,714	\$673,512
Other	\$290,101	\$370,250	\$472,544	\$603,099	\$769,724
Total	\$14,869,667	\$19,097,157	\$24,540,385	\$31,881,254	\$41,445,526

Revenues are projected to be \$14.8 million in 2020, increasing to \$41.5 million by the year 2040. These numbers are very high in the later years but they must be looked at in terms of the costs that are also increasing significantly over the same time period. And because they are in nominal dollars, they include the general inflationary increases that make future dollars much higher than they are in today's terms.

Figure 6 provides a chart of the historic and forecast revenues for the period 2001 through 2025. Note that the revenue increased by 2.6 times over the ten years between 2001 and 2011. This compares to the projected revenues which increase by 1.9 times for the 10 years between 2011 and 2021.

**Figure 6**  
**Historic and Forecast Annual Revenues**



# Development of Post-Acquisition Costs

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## Overview

Annual costs for operating the new Shoreline water utility are made up of five major components, including the cost of the initial acquisition, costs of ongoing capital projects, costs of wholesale water purchases, operating & maintenance costs (O&M) and taxes. Costs associated with each of these components were developed based on current estimates in 2012 dollars. Most of the costs were taken directly from the Engineering Review, and included a combination of capital costs and annual O&M cost items. To develop the long-term forecast of costs for the period 2020 through 2040, the basic financial assumptions were applied as needed to estimate costs in each year.

## Acquisition and Initial Capital Costs

The negotiated price for the acquisition is \$25 million in the year 2020. This price does not need to be escalated to account for inflation as it reflects the price to be paid at the time the transaction occurs. While there are details that still need to be worked out in the contract, it is expected that there may be some adjustments to this purchase price to reflect any new capital that is spent over the next 8 years, any retirements in assets, and any changes in the assets that are to be included. Current projections for capital investments and depreciation translate into an additional \$1.6 million, leading to a total cost of \$26.6 million.

The Engineering Review includes additional facilities and capital that are required at the time of the acquisition, including separation costs. The recommended separation alternative has a cost of \$5.9 million in 2012. Other initial capital costs include \$4.1 million for a storage tank, \$1.1 million for pump station & controls, and \$2.2 million for buildings, equipment and inventory. It is assumed that all of these capital items will be acquired and constructed in 2019 using a construction loan, with interest accruing during 2019. Given the expected inflation and interest during construction, the cost to be financed in the year 2020 is \$18.2 million.

The combined acquisition cost and initial capital totals \$43.2 million. Given the assumed interest rate and financing terms, the debt service payment associated with the acquisition is \$2.8 million per year.

**Table 12**  
**Acquisition and Initial Capital Costs**

	2012 Value	2020 Value
Acquisition Price	\$26,600,000	\$26,600,000
Separation Cost	\$5,938,300	\$8,542,269
2 MG Storage Tank	\$4,856,100	\$6,985,520
Pump Stations & Controls	\$1,184,400	\$1,703,189
Utility Buildings	\$1,043,590	\$1,501,208
Heavy Equipment & Vehicles	\$933,900	\$1,343,419
Tools & Inventory	\$275,880	\$396,854
Total	\$40,832,770	\$47,072,459
Annual Debt Service		\$3,062,131

### Operating & Maintenance (O&M) Costs

The annual O&M costs come directly from the Engineering Review and include labor costs, materials and supplies, employee benefits and administrative costs. In 2012, these costs are estimated at \$3.9 million. Inflation is added to each item, with costs escalating to \$5.5 million in 2020 and to \$13.7 million by 2040. While costs were developed assuming that the City conducts all of the required tasks internally, it might be cost-effective to outsource certain activities. The City may consider this option as the acquisition date approaches, however, it would only include outsourcing to the extent it would be reduce costs or provide enhanced service for the same costs.

**Table 13**  
**Forecast of Annual O&M Costs**

	2012	2020	2025	2030	2035	2040
Labor	\$1,227,799	\$1,759,465	\$2,203,125	\$2,758,656	\$3,454,268	\$4,325,282
Materials & Supplies	\$659,681	\$945,339	\$1,183,712	\$1,482,191	\$1,855,935	\$2,323,920
Employee Benefits	\$491,120	\$703,787	\$881,251	\$1,103,463	\$1,381,708	\$1,730,114
Administrative	\$1,093,585	\$1,567,134	\$1,962,296	\$2,457,100	\$3,076,673	\$3,852,474
Total	\$3,472,185	\$4,975,725	\$6,230,383	\$7,801,411	\$9,768,584	\$12,231,790

### Wholesale Water Purchases

As the City is purchasing the distribution system only it is not acquiring any of the water resources to provide water to the new utility. The new utility will be able to purchases water from SPU on a wholesale basis, as do many of the other water utilities in the region. The pricing and contract terms are expected to be the same as for SPU's other wholesale customers. Rates for wholesale

water supply are developed by SPU in its *2012-2014 Water Rate Study* and differ between peak and off-peak periods. The rates between 2012 and 2014 are provided in Table 11.

<b>Table 14</b> <b>SPU Forecast of Wholesale Water Rates</b>			
	<b>2012</b>	<b>2013</b>	<b>2014</b>
On-Peak	\$2.25	\$2.26	\$2.27
Off-Peak	\$1.52	\$1.53	\$1.53

Wholesale customers are expected to contract for a quantity of water that is sufficient to cover the variation from year to year. The projections of water use are relatively flat for the new water utility, with sales of roughly 1.31 million CCF in 2020 and increasing to 1.40 million CCF by 2040. We have assumed that the contract water amount is 1.52 million CCF, which includes a 10% adder for growth and variability and water losses of 5%. Based on historic usage, the water amount is split with 44% during the peak months and 56% during the off-peak months.

Based on the contract amount and the SPU rates, the total purchase amount is \$2.8 million based on 2014 rates. Given price increases, this amount is forecast to be \$3.4 million in the initial year 2020.

<b>Table 15</b> <b>Forecast of Wholesale Water Costs from SPU</b>						
	<b>2014</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
Annual Cost	\$2,815,664	\$3,443,399	\$4,128,903	\$4,953,646	\$6,005,443	\$7,285,781

## **Taxes**

The water utility will face two taxes on revenue from operating the water utility. There is a state tax rate of 5.029% that will be applied to all revenue. There is also a 6% franchise fee currently collected by SPU and paid to the City of Shoreline. We have assumed that post-acquisition the City will replace the 6% franchise fee with a 6% utility tax once the new water utility begins operations. SPU rates for Shoreline are currently 21% higher than rates within the City of Seattle. This adder includes the 6% franchise fee. The state utility tax is also included in the SPU rates.

Based on the expected revenues the state tax is expected to be nearly \$750,000 in 2020 and the franchise fee is expected to be nearly \$900,000. The tax rates are assumed to remain constant over time but the payments will increase as the revenues grow.

**Table 16**  
**Forecast of Tax Expenses**

	<b>Rate</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
State Tax	5.029%	\$747,796	\$960,396	\$1,234,136	\$1,603,308	\$2,084,296
Shoreline Utility Tax	6.000%	\$892,180	\$1,145,829	\$1,472,423	\$1,912,875	\$2,486,732
Total		\$1,639,976	\$2,106,225	\$2,706,559	\$3,516,183	\$4,571,027

### **Annual Capital Improvements Program (CIP)**

In addition to the upfront capital improvement projects previously discussed, it is expected that additional CIP will be required each year. The Engineering Review estimates such CIP to be \$1.37 million per year in 2012 dollars. The three largest categories include service replacements, distribution main relocations and extensions, and vehicle replacements. It is assumed that this amount will escalate each year with inflation, to reach a sum of nearly \$2 million in 2020.

The other ongoing CIP item is replacement of certain existing distribution mains. The Engineering Review estimates this cost at \$32.9 million in 2012 dollars, or \$47.1 million in 2020 dollars. This amount represents 23% of the total system and it is expected that costs would be spread out over time. If the cost is spread out over 23 years, as recommended in the Engineering Review, the annual cost would be roughly \$2 million per year in 2020, and would escalate with inflation after that time.

While the annual CIP of \$2 million is expected to be required every year, the main replacement program will have some options in terms of timing and funding. Given the fact that rates must be set sufficiently high to meet the required debt service coverage level required by the bonds, it is expected that there will be cash left over each year that can be used to fund the CIP program. Given the current revenue and cost projections and the initial debt service payment of \$3.06 million, operating revenues after debt service for the year 2020 are \$1.8 million, which provides a 1.6 DSC level. This amount can be used to fund the annual CIP. This is slightly below the level of the \$2 million in ongoing CIP, however, that amount may be too high for the initial year. Because the amount includes replacement of vehicles, tools and Scada improvements, all of which will be brand new in 2020, it is not likely they will need replacement or improvements in the first several years.

Funding for the distribution mains replacement can be funded with any additional cash available, through additional debt, or some combination of both. It is recommended that the funding of this project be initially based on the amount of funds available without raising rates above the level of SPU. Once the City begins operations of the water utility, it can better assess whether that level of funding is adequate. If additional funds are shown to be needed based on a prioritized list of replacements that need to be made immediately, then additional debt can be issued to cover a large portion of the replacements at once rather than doing an incremental amount each year.

## Base Case Financial Results

While the previous sections provided the detail that went into the forecasting of revenues and costs for the new water utility, the financial results for the base case scenario are presented here.

Table 15 summarizes the budget items for 2020 through 2040. Operating Revenues include revenues from retail sales as well as a small amount for other income. Operating expenses include labor, materials, administrative costs and taxes. The debt service is the amount for the initial purchase price plus any upfront capital needs.

The net cash flow equals the revenues minus the operating expenses and debt service payments, and ranges from \$1.8 million in 2020 to \$14.5 million in 2040. That net cash flow allows the utility to meet its DSC requirements, and the cash can be used to fund capital projects during the year. The cash will first be used to fund any ongoing annual CIP projects. Any surplus amounts are available to develop a capital or reserve fund, pay for mains replacement, or lower rates for customers.

For purposes of the analysis, it was assumed that all surplus funds go towards the mains replacement program and the cumulative amount paid is shown. In this case it is \$78 million over the 20-year period. When compared to the recommended mains replacement budget, escalated over time, the base case allows for 111% of the program to be funded.

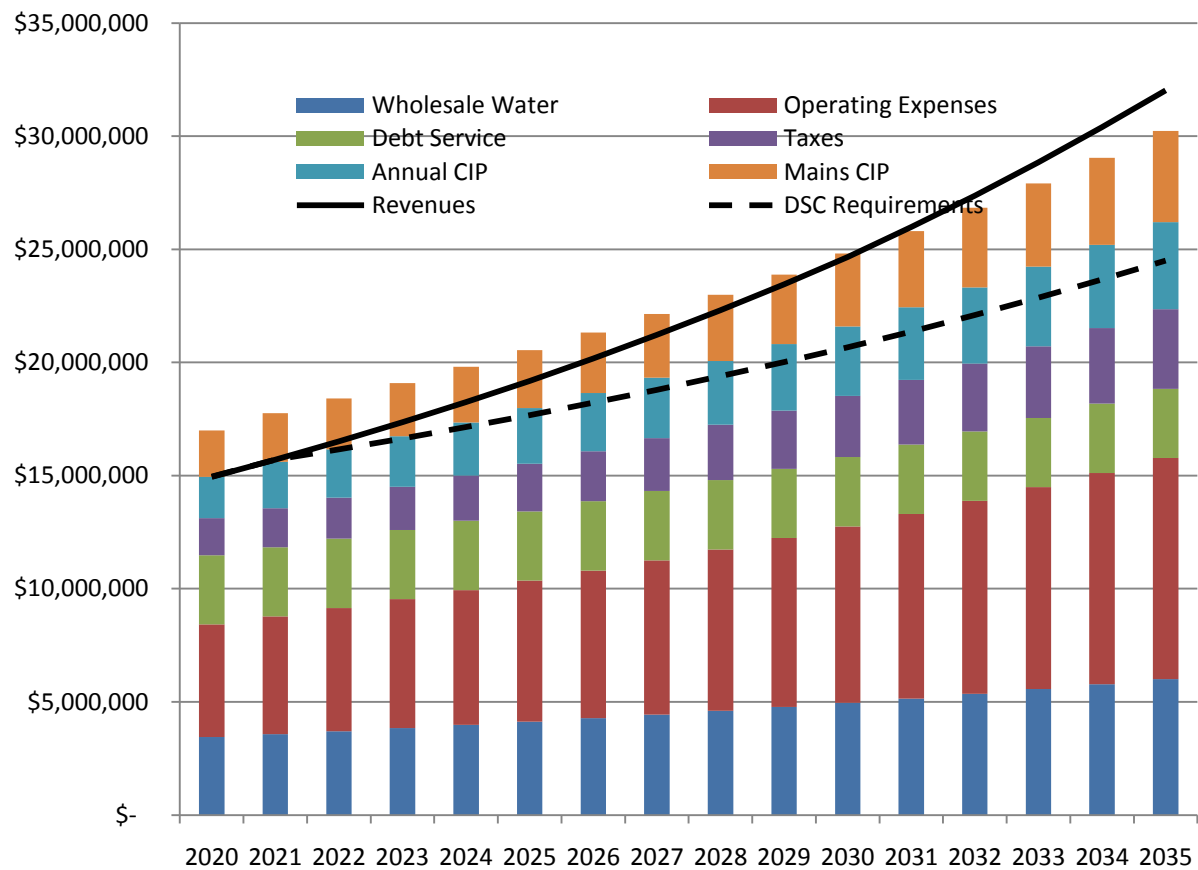
**Table 17**  
**Summary of Base Case Results**

	2020	2025	2030	2035	2040
Operating Revenues	\$14,941,318	\$19,188,604	\$24,657,097	\$32,030,211	\$41,635,638
Operating Expenses	\$10,059,099	\$12,465,512	\$15,461,617	\$19,290,210	\$24,088,598
Debt Service	\$3,062,131	\$3,062,131	\$3,062,131	\$3,062,131	\$3,062,131
Net Cash Flow Before CIP	\$1,820,088	\$3,660,961	\$6,133,349	\$9,677,870	\$14,484,909
Annual CIP	\$1,820,088	\$2,452,550	\$3,070,975	\$3,845,339	\$4,814,965
Net Available for Mains Replacement	\$0	\$1,208,411	\$3,062,374	\$5,832,531	\$9,669,945
Debt Service Coverage	1.6	2.2	3.0	4.2	5.7
Cumulative Mains Replacement	\$0	\$3,173,192	\$14,549,968	\$37,808,642	\$77,988,181
Cumulative Percent	0%	5%	21%	54%	111%

The results show that the new water utility would have sufficient funds to meet its DSC obligations and fund the recommended CIP program in 2020 and beyond. The first year is the tightest year financially, with both DSC and the net amount available for CIP growing over time. Full results on an annual basis are included in the Appendix.

The results are also shown by year in the following chart. The chart compares the forecast of revenues to the forecast of costs. The costs are broken down into wholesale water purchases, operating costs, debt service for the acquisition, separation and upfront costs, plus the State and City utility taxes. The difference between the revenues shown and the costs in the chart reflect the amounts that can be used to meet the DSC requirement and fund CIP programs. To the extent that this difference is not needed for CIP, it could be used to reduce rates or provide reserve funds. While in the early years the entire difference is needed to meet DSC requirements and CIP, in the later years the difference grows substantially and there is likely to be more options for using the available funds.

**Figure 7**  
**Base Case Revenue vs. Cost Comparison**  
**2020-2035**



While it can be seen that the revenues increase faster than the costs this is due to three factors. First, the debt service amount is fixed over time and does not increase. Second, the wholesale water rates grow less than the retail rates, as has been the case for SPU since 2004. Because the bulk of the water resource costs are fixed capital-related costs, we believe the lower increase is appropriate. Finally, the SPU rates are expected to increase a little more than costs. This has been the case historically and is driven in part by SPU’s declining load levels which are projected to continue.

# Sensitivity of Financial Results

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As with any long-term planning study, there is uncertainty and risk surrounding the analysis because the future is unknown. While we provided detailed research and analysis to support the assumptions contained in this report, there are many factors outside the control of the City that will influence the projected revenues and costs. For that reason we conducted a sensitivity analysis to determine what the financial results would be under various different assumptions. This was completed by looking at individual changes in assumptions first to see which had the largest impacts. Then both a high and low case with changes to multiple assumptions were created to determine the combined financial risks to the utility.

It is important to keep in mind that the majority of factors driving increased costs or reduced revenues will also impact SPU. For example, if costs grow faster than projected, it is likely that SPU will also see increased costs and have to increase their rates. Similarly, if retail rates are lower than projected, it is likely that SPU could do this because costs for operating the utility declined, which would also mean the Shoreline water utility might see lower costs.

The sensitivity cases were all performed with both a low and high case surrounding each financial assumption. The following is a list of the sensitivity adjustments made:

- Separation Option B5 (most costly case)
- All capital and O&M costs 10% higher or lower
- Wholesale charges 10% higher or lower
- Bond rate higher or lower
- Escalation of rates and costs higher or lower
- Load growth higher or lower
- Cost escalation equal to rate escalation
- Low case for multiple factors
- High case for multiple factors

Once all of the cases were completed the results were placed in order of net revenues before CIP for the year 2020 for the comparison in Table 16 and labeled cases A through N. The various cases are described in more detail following the table and are grouped according to the preceding list. The full results by year for each case are included in the Appendix.

One other option was evaluated to determine the impact over the base case. The City undertook an *Operation Efficiency Report* to determine if there were any savings associated with operating the water utility in conjunction with the wastewater utility to be acquired in 2017 and with other City functions. This report resulted in savings in both the initial capital requirements and annual operating costs.

**Table 18**  
**Summary of Sensitivity Analysis**

			<b>2020 Net Before CIP</b>	<b>2020 Debt Service Coverage</b>	<b>2025 Debt Service Coverage</b>	<b>% of Mains Replacement Completed</b>
Base	Base Case		\$1,820,088	1.6	2.2	111%
Efficiency	Base with Efficiency Savings		\$2,349,171	1.8	2.4	136%
A	Low Costs - 10% less CIP and O&M		\$2,450,837	1.89	2.5	165%
B	All Low Case		\$2,368,017	2.0	2.3	104%
C	Low Wholesale - 10% less		\$2,164,428	1.7	2.3	127%
D	Low Bond Rate - 4%		\$2,171,289	1.8	2.5	122%
E	Load growth 0.5% higher		\$2,103,326	1.7	2.4	161%
F	High Escalation - 7% retail, 5% wholesale, 6.6% costs		\$2,104,303	1.6	2.5	131%
G	Equal Escalation - 5% retail, 5% costs		\$1,631,974	1.5	2.1	78%
H	Load growth 0.5% lower		\$1,539,663	1.5	2.0	67%
I	Low Escalation - 3% retail, 2.5% wholesale, 2.6% costs		\$1,443,337	1.5	1.8	68%
J	High Wholesale - 10% more		\$1,475,748	1.5	2.1	97%
K	Separation Option B5		\$1,281,965	1.4	1.9	97%
L	High Bond Rate - 7%		\$1,057,394	1.3	1.8	91%
M	High Costs - 10% more CIP and O&M		\$1,189,339	1.4	1.9	70%
N	All High Case		\$442,241	1.1	1.8	108%

The cases range from providing a net amount before CIP of \$442,000 to \$2.5 million in the first year. In four cases, the DSC falls below 1.5 in the first year. While there is positive cash flow in those cases, the low DSC might be problematic. This issue could be resolved by shaping the debt service so that the first year would not result in a full 12 months of payments to better match the delay in cash flow from the changeover in billing from SPU to Shoreline. In all cases, the conditions improve each year and within the first five years the DSC is more than adequate. Because the funding of mains replacement is funded with any surplus revenues beyond the annual CIP, the cumulative funding for the program runs from 68% to 165%.

As with any utility, there will be some cost items than can be managed in the event that net revenues are insufficient. Operating and CIP budgets can be reduced, CIP items can be deferred, additional bonds can be issued to fund capital rather than funding it all from cash, or allocations of costs to cover City provided services can be deferred.

Further, if the efficiencies identified by the City are achieved, all cases see reduced costs of roughly \$500,000 in the first year and an increase in the DSC of 0.2 points.

### **All Capital and O&M Costs 10% Higher or Lower (Cases A and M)**

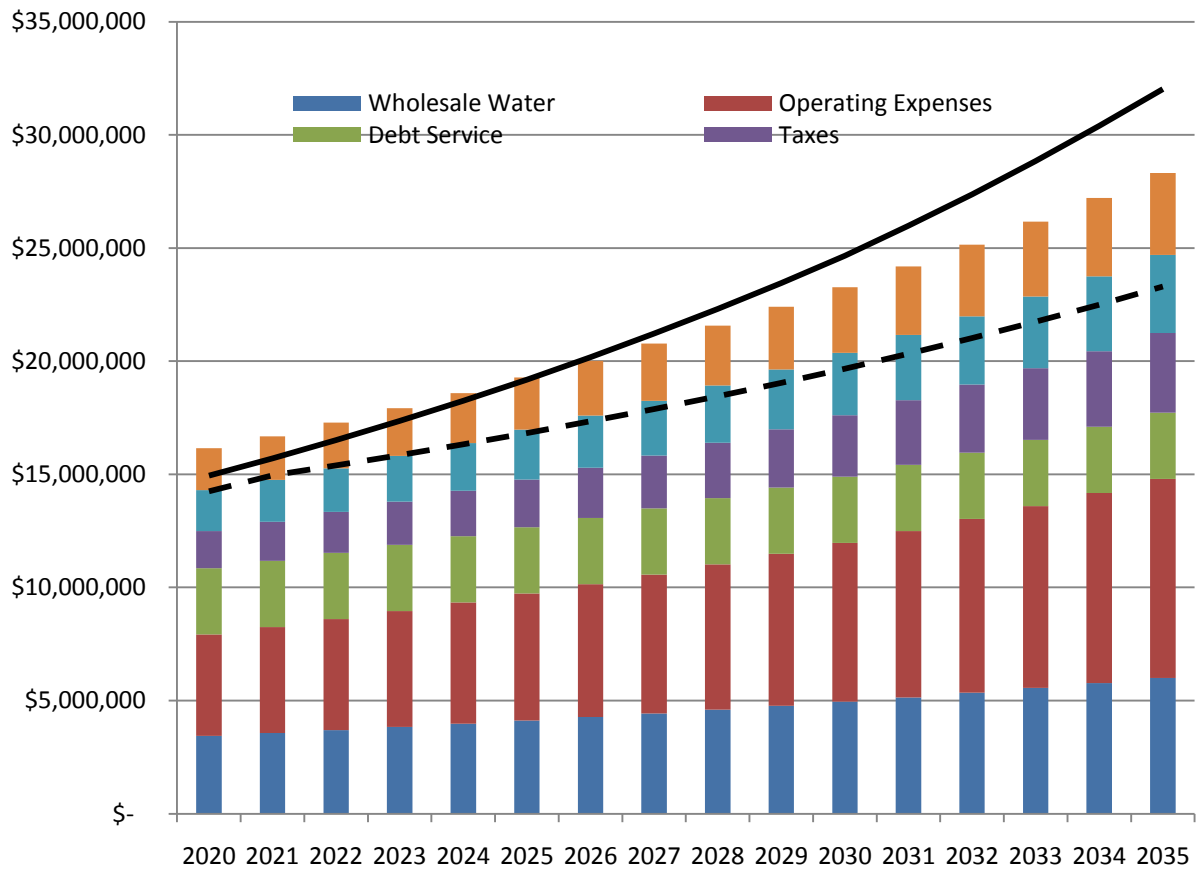
These cases represent two of the most extreme cases. In the low case all O&M and CIP costs are reduced by 10% initially. In the high cases all O&M and CIP costs are increased by 10%. Thereafter the O&M and CIP costs increase at the base case escalation rates. The adjustments are made to labor, materials and administrative costs for O&M as well as to separation costs, upfront capital, ongoing CIP and mains replacement costs.

In the low case, costs are reduced by \$600,000 and the DSC increases to 1.8 in the year 2020. Apart from the efficiency savings, the case provides the largest cost savings to the utility.

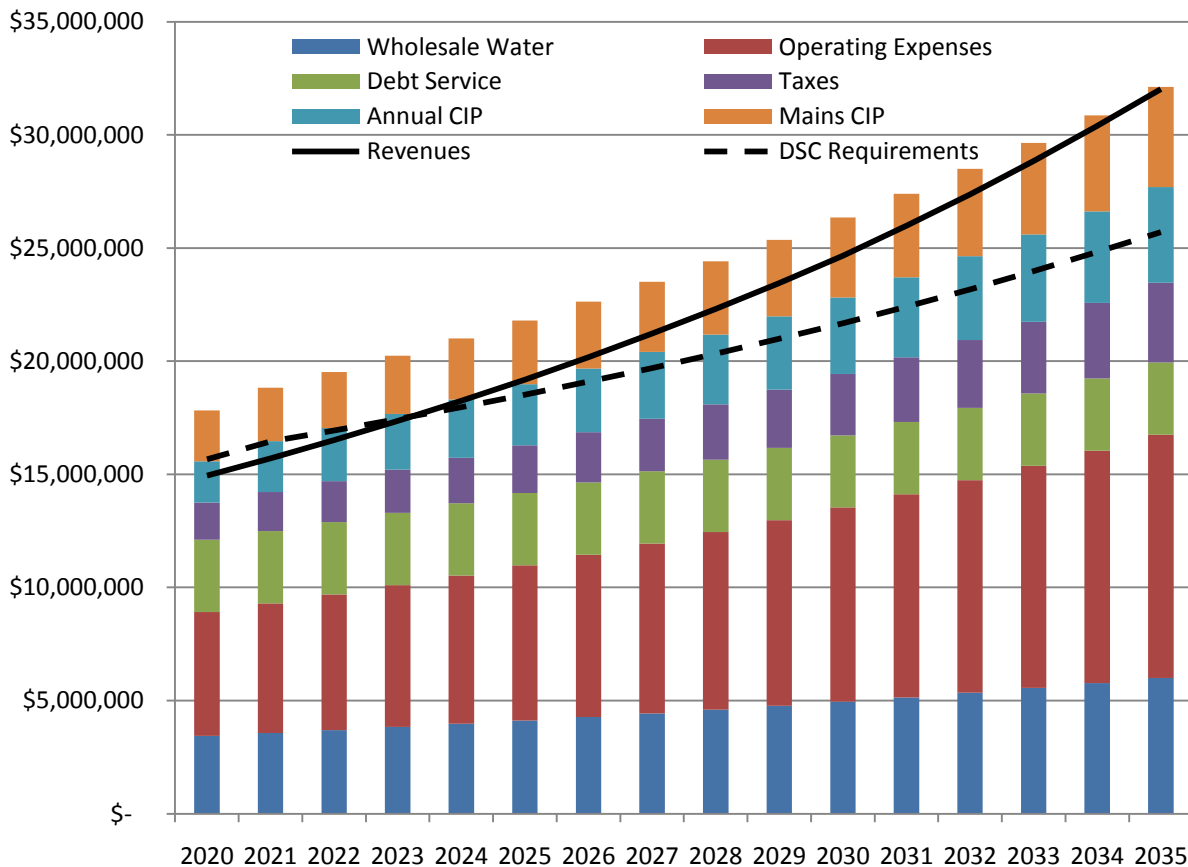
In the high case, costs are increased by over \$600,000 and the DSC is 1.4 in 2020. This is the second most extreme case and would require the utility to enact other cost saving measures.

The following charts reflects what would occur under cases A and M and can be used for comparison to Figure 7.

**Figure 8**  
**Case A Revenue vs. Cost Comparison**  
**2020-2035**



**Figure 9**  
**Case M Revenue vs. Cost Comparison**  
**2020-2035**



### Low Case for Multiple Factors (Case B)

A low case was created to reflect the low assumptions for multiple factors, including O&M, CIP and water supply costs reduced by 10%, low escalation for retail rates (3%), wholesale rates (2.5%) and costs (2.6%), borrowing costs of 4%, and load growth reduced by 0.5%. This combination reflects a prolonged economic downturn affecting all factors and is not considered to be very likely.

With the low case, the Net Before CIP increases by \$500,000 to \$2.4 million in 2020 with debt service reduced to \$2.5 million. The DSC increases to 2.0.

### Wholesale Charges 10% Higher or Lower (Cases C and J)

The starting costs for wholesale purchases are changed in these cases to be either 10% lower or 10% higher. Thereafter the costs would escalate at the base case assumptions. This changes costs in 2020 by about \$350,000 in either direction. Even with the high wholesale rates, the DSC level is 1.5 which is adequate for the first year.

### **Bond Rate Higher or Lower (Cases D and L)**

A low bond rate of 4% and a high bond rate of 7% were looked at for these cases compared to the base assumption of 5%. With the lower bond rate the debt service decreases by over \$300,000 to \$2.7 million per year. In the high case, the payment increases by \$800,000 to \$3.8 million per year.

With the high bond rate case the DSC is only 1.3 in 2020 and the utility would need to undertake further cost saving measures in the first few years. The analysis assumes that the higher bond rates would occur for the entire 20-year period. In reality, the utility would likely have opportunities to refinance debt during that 20-year period when bonds rates became lower than 7%.

### **Load Growth Higher or Lower (Cases E and H)**

A change in the growth rate of plus or minus 0.5% was applied to the CCF for each rate class in these cases. Change in the load growth had one of the smallest impacts with Net Before CIP changing by about \$300,000 in either direction. In both cases the 2020 DSC was sufficient at 1.5 or above.

### **Escalation of Rates and Costs Higher or Lower (Cases F and I)**

Under the low escalation case, the escalation for retail rates was reduced to 3.0%, the escalation for wholesale rates was reduced to 2.5% and the escalation of costs was reduced to 2.6%. Under the high case, the escalation for retail rates was increased to 7.0%, the escalation for wholesale rates was reduced to 5% and the escalation of costs was increased to 6.6%. The changes were not symmetrical because it was believed that there was more room for costs to go up than to go down.

Note that it is likely that the cost increases or decreases would be driven by economic conditions that might also impact borrowing rates. However, for these cases the bond rates remained at the base case of 5%.

In these cases the Net Before CIP changed by roughly \$400,000 in either direction. Because the revenues and costs both move in the same direction, the impacts are not as great as some other factors in the first year. The impacts do become more pronounced over time. Both cases provide a sufficient DSC level.

### **Cost Escalation Equal to Rate Escalation (Case G)**

To reflect a case where the costs facing the utility escalate at the same rate as the SPU rates and the resulting revenues, the cost escalation was increased to 5% per year. This escalation factor applied to all O&M costs as well as all CIP amounts. This case increased costs in the first year by roughly \$200,000 and provided an adequate DSC of 1.5. The biggest impact is that less funds would be available for the mains replacement program over time.

### **Separation Option B5 (Case K)**

With this case option B5 rather than B3 is used for the separation of the facilities. This involves a capital cost of \$11.7 million rather than \$5.9 million.

This case increases the debt service payment by roughly \$600,000 per year, from \$3.0 to \$3.6 million per year. This reduces the 2020 Net Before CIP to \$1.3 million and the DSC to 1.4. The additional cost means that less funds are available for the mains replacement program.

### **High Case for Multiple Factors (Case N)**

The high case was created to reflect the high assumptions for multiple factors, including O&M, CIP and water supply costs increased by 10%, high escalation for retail rates (7%), wholesale rates (5%) and costs (6.6%), borrowing costs of 7%, and load growth increased by 0.5%. This combination reflects a period of hyper-inflation as was seen in the 1970's, or a period of prolonged strong economic conditions affecting all factors and is not considered to be very likely.

With the high case, the costs increase by the maximum amount of \$1.4 million in 2020 with Net Before CIP at only \$440,000. The DSC would fall to 1.1 and serious cost cutting measures would be required to make the utility viable.

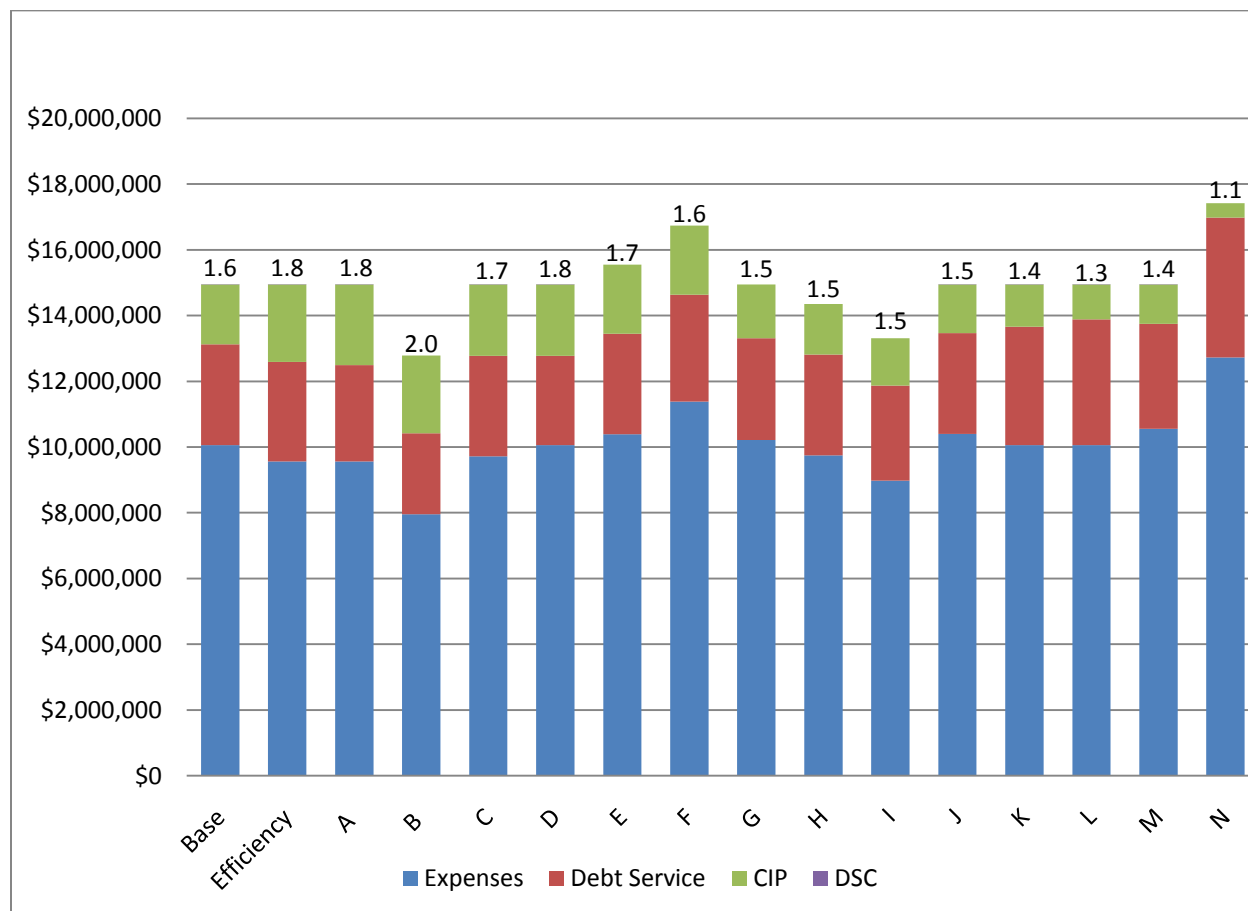
### **Summary**

The following chart provides a graphic comparison of the sensitivity cases in terms of the costs for 2020. In all cases the expenses sum to the total expected revenues for the year. The operating expenses (represented in blue) include the labor, maintenance and overhead costs as well as the wholesale water purchases. This amount varies in most of the cases as it is driven by the assumed escalation rates, changes to load levels and any changes to the starting values. The debt service (shown in red) varies based on the starting cost and escalation for the separation and upfront capital costs and depends on the assumed bond rate for each case. The final cost is the CIP (shown in green) and any funds remaining after operating expenses and debt service is assumed to be spent first for ongoing annual CIP requirements followed by mains replacement. When all costs are added, they equal the revenue forecast for each case. Therefore the total amount for each bar is the revenue amount. Finally, the 2020 debt service coverage ratio (DSC) is shown at the top of each column.

For the majority of the cases, the revenues in 2020 are expected to be in the range of \$14 to \$15 million. The exceptions are cases B and I where there is low escalation to the retail rates. For cases F and N revenues are above \$17 million due to high escalation of retail rates. For nearly all cases, there is an adequate amount remaining to pay for CIP and to meet the DSC levels required to meet bond covenants. Three cases (K –M) contain revenues that exceed costs, however, the resulting DSC is marginally high enough to cover the expected risk. The final case N, where all assumptions are based on the high case, still has a slightly positive net revenue but the DSC of 1.1 is insufficient to meet the 1.2 DSC level generally required in bond

covenants. However, with the expected efficiency savings shown in the City's report, that case would improve and results would become within the acceptable range.

**Figure 10**  
**Comparison of Sensitivity Cases**  
**2020 Cost Breakdown**



In summary, while there are many risks facing the new water utility, in nearly all cases the utility is forecast to have sufficient revenues with rates set at the same level as with SPU. In the most extreme case revenues are still expected to be above costs, although there would be insufficient funds to meet DSC and CIP requirements in the first year prior to the identified efficiency savings. It is expected that in this extreme case the utility would likely see the expected efficiency savings as well as undergo short term cost cutting measures to ensure adequate financial results. After the first year, the DSC improves and there is additional funding for CIP in all of the cases.

## Summary and Conclusions

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A detailed financial analysis was completed to forecast the expected revenues and costs associated with the City of Shoreline acquiring the water system within City boundaries from SPU in 2020. The revenues and costs were presented to the City's SPU Steering Committee and were adjusted to reflect input provided by Committee members. The base case results showed that the acquisition would provide sufficient revenues to meet the costs of the utilities for the period 2020 through 2040, assuming that rates would be at the same level as SPU rates for Shoreline.

To assess the range of risks associated with uncertainty in revenues and costs, a sensitivity analysis was completed to determine whether revenues would still be sufficient in alternative scenarios. While a few cases presented problematic debt service coverage ratios, the analysis resulted in a positive cash flow for all cases analyzed. In the cases with insufficient debt service coverage ratios, reducing costs in the initial years, shaping the debt service for the bonds, or deferring costs are all likely options to resolve the debt service coverage issue.

Based on the completed analysis, the acquisition is expected to be feasible at rates that are equal to those that SPU would charge in Shoreline. The estimated revenues allow for a substantial capital improvement plan (CIP), including the replacement of a large portion of mains that is not expected to occur with continued SPU ownership. In the later years, the City may also have the potential to lower rates below what would be charged by SPU.

# Appendix

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